

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

DRAFT PERMIT NO. F-01-032 (REVISION 2)
MURAKAMI MANUFACTURING USA, INC.
575 WATER TOWER BYPASS, CAMPBELLISVILLE, KENTUCKY
MAY 24, 2006
FROUGH SHERWANI, REVIEWER
PLANT I.D. # 021-217-00039
AI # 4303
ACTIVITY # APE20060001

Permit Number F-01-032 (Revision 2):
Significant Revision:

The facility is classified as a conditional major/synthetic minor source and operates under a conditional major permit # F-01-032 (Revision 1). Total potential emissions for the facility are greater than 100 tons threshold for criteria pollutants and above 10 tons for a single HAP and 25 tons for combined HAPs. The actual emissions from the plant are far below those calculated for their PTE, and therefore the facility has accepted operational limitations to maintain its emissions below the major source thresholds. By accepting its current permit, the source has agreed not to emit more than 95 tons of VOCs, 9.5 tons of a single HAP and 23.75 tons of combined HAPs in a 12 consecutive month period.

The facility was originally permitted in November 2001, when it operated one painting line (Line 1). This paint line contains only controls for particulates. On December 30, 2004, the source submitted an application to install a second coating line (Line 2); the facility is operating under a revised conditional permit issued July 13, 2005. The process elements in Lines 1 and 2 are essentially identical. However, Line 2 was installed using equipment supplied by a Japanese vendor; this equipment includes integrated carbon filters that were sold as standard equipment on the paint booth. When Murakami applied for a modification to its operating permit, the application indicated the carbon filters provided VOC control. As a result, the permit # F-01-032 (Revision 1) requires Murakami to determine the both the capture efficiency and performance of the carbon adsorption filters.

On December 14, 2005 on behalf of Murakami, Shield requested an extension to the 180 day allowance for performance testing stated in their permit. The request was made to give Shield an opportunity to review and evaluate the relevant information concerning Line 2 emissions. On January 6, 2006, the Division, agreed to extend the testing deadline to February 28, 2006.

On February 13, 2006, on behalf of Murakami, Shield Environmental Associates, Inc has submitted an engineering evaluation to the confirm the emissions from the facility and to ensure that all emission points from Line 2 have been addressed.

The Division reviewed the engineering evaluation and determined that the source accepts the carbon filters provide 0% control, and performance testing should not be required. If no performance testing is required, the issue of capture efficiency is also not an issue since the facility accepts that 100% of all VOCs and HAPs used at the plant are eventually emitted to the atmosphere. The source will not remove carbon filters from the booth and will not take any credit for VOCs/HAPs control.

Due to the significant changes in the monitoring, reporting and record keeping requirements this revision is considered as a significant per 401 KAR 52:30 Section 6 (1)(a).

Permit Number F-01-032 (Revision 1):
Significant Revision:

The facility is currently operating under the authority of permit F-01-032. The source has applied to the Division for Air Quality to construct a second manufacturing line. This new line will have a primer spray booth, a base coat spray booth, and a clear coat spray booth. A carbon adsorption system will control VOC emissions from the second line. For the purpose of estimating emissions, the capture efficiency and collection efficiency were assumed to be 100% and 40% respectively. The actual efficiencies will be determined through performance tests.

Identical water wall control devices will control the particulate overspray from the three booths. Associated with the coating operation, the source will also install a natural gas fired annealing oven, a natural gas fired cure oven, and two (2) natural gas fired air makeup units. The proposed second line will use the same coatings, thinner, etc. as currently being used on Coating Line #1. The emission calculations for the coating operations were based on the material balance using the Line #1 material Safety Data Sheets.

Coating Line # 2:

Emission Point:	8	Primer Spray Booth
MP1		Prime Coat
MP2		Clean up (Isopropyl Alcohol wipe to clean the parts)
Control Parameters for Particulate emissions:		
Transfer Efficiency		70%
Water Wall (efficiency)		90%
Control Parameters for VOC/HAP emissions:		
Carbon Adsorption System:		Performance test is needed to determine efficiency.
Capture Efficiency		Performance test is needed to determine efficiency

Emission Point:	9	Base Coat Spray Booth
MP1		Base Coat
MP2		Clean up (Isopropyl Alcohol wipe to clean the parts)
Control Parameters for Particulate emissions:		
Transfer Efficiency		70%
Water Wall (efficiency)		90%
Control Parameters for VOC/HAP emissions:		
Carbon Adsorption System:		Performance test is needed to determine efficiency.
Capture Efficiency:		Performance test is needed to determine efficiency.

Emission Point:	10	Clear Coat Spray Booth
MP1		Clear Coat
MP2		Clean up (Isopropyl Alcohol wipe to clean the parts)
Control Parameters for Particulate emissions:		
Transfer Efficiency		70%
Water Wall (efficiency)		90%
Control Parameters for VOC/HAP emissions:		
Carbon Adsorption System:		Performance test is needed to determine efficiency.
Capture Efficiency:		Performance test is needed to determine efficiency.

Permit Number F-01-032:

Source Description:

The Murakami manufacturing USA, Inc. is located in Campbellsville, Kentucky. The facility manufactures mirror housings for the automotive industry.

Emission Point:	01(PC1)	Prime Spray Booth
	MP1	Primer Coat
	MP2	Clean Up

MP1:

This point is for primer coat application. The “PTE” is based on 6.34 gallons per hour. The assumed transfer efficiency of the system is 70%.

MP2:

This point is for clean up solvent. The consumption of solvent is 0.021 gallons per day. The “PTE” is based on 8760 hrs per year.

Emission Point:	02(BC1)	Electrostatic Spray Booth
	MP1	Base Coat
	MP2	Clean Up

MP1:

This point is for Base Coat. The “PTE” is based on 21.4 gallons per hour. The assumed transfer efficiency of the system is 70%.

MP2:

This point is for clean up solvent. The consumption of solvent is 0.021 gallons per day. The “PTE” is based on 8760 hrs per year

Emission Point:	03(CC1)	Clear Coat Spray Booth
	MP1	Clear Coat
	MP2	Clean Up

MP1:

This point is for clear coat. The “PTE” is based on 21.4 gallons per hour. The assumed transfer efficiency of the system is 70%.

MP2:

This point is for clean up solvent. The consumption of solvent is 0.021 gallons per day. The “PTE” is based on 8760 hrs per year

Emission Point:	04(CD1)	Conductive Coating Booth
	MP1	Conductive Coating
	MP2	Clean Up

MP1:

This point is for conductive coating. The “PTE” is based on 0.16 gallons per hour. The assumed transfer efficiency of the system is 70%.

MP2:

This point is for clean up solvent. The consumption of solvent is 0.021 gallons per day. The “PTE” is based on 8760 hrs per year

Emission Point:	05(CO1)	Curing Oven
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This point is for curing oven. Natural gas is used as a fuel. The rated capacity of the oven is 1.0 mmBTU/hr. This is an insignificant activity.

Emission Point:	06(AMU1)	Air make up Unit
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This point is for air make up unit. Natural gas is used as a fuel. The rated capacity of the

unit is 4.0 mmBTU/hr. This is an insignificant activity.

Emission Point: 07(AO1) Annealing Oven

This point is for oven. Natural gas is used as a fuel. The rated capacity of the unit is 0.5 mmBTU/hr. This is an insignificant activity.

Emission Point: Plastic Molding Machine

This point is for molding machine. The rated capacity of the machine is 460 ton. This is an insignificant activity.

Emission Point: Plastic Molding Machine

This point is for molding machine. The rated capacity of the machine is 360 ton. This is an insignificant activity.

Emission Point: Plastic Molding Machine

This point is for molding machine. The rated capacity of the machine is 80 ton. This is an insignificant activity.

Emission Point: Mold Release

This point is for mold release. The consumption of the agent is 10 gallons/year. This is an insignificant activity.

Emission Point: Lubricant Spray

This point is for mold release. The consumption of the agent is 5 gallons/year. This is an insignificant activity.

Emission Point: Space Heaters

This point is for space heater. Natural gas is used as a fuel. This is an insignificant activity.

Comments:

Type of control and efficiency:

Emission points 01, 02, and 03 have water wall to control particulate matter. The control efficiency and transfer capacity of the water wall is assumed to be 90% and 70% respectively.

Emission factors and their source:

AP-42 5th edition, and mass balance are used for the emission factors for PM, VOC and HAPS.

Applicable regulations:

- a. **401 KAR 59:010**, New Process Operations (applicable to each affected facility associated with a process operation commenced on or after July 2, 1975);
- b. **401 KAR 63:020**; Potentially hazardous matter or toxic substances, applicable to each affected facility, which emits or may emit potentially hazardous matter or toxic substances.
- a. **401 KAR 52:030**. Federally enforceable permits for non-major sources.

Precluded regulations:

40CFR 63 Subpart PPPP- National Emission Standards for Hazardous Air

Emission and operating caps description:

- a. The source has accepted a facility-wide cap on annual VOC emissions of no more than 95 tons per rolling 12-month period. Compliance with this allowable will be demonstrated by record keeping and emissions estimating methodology specified in the terms and conditions of the permit.
- b. The source has accepted a facility-wide cap on annual individual HAP emission of no more than 9.5 tons per rolling 12-month period. Compliance with this allowable will be demonstrated by record keeping and emissions estimating methodology specified in the terms and conditions of the permit.
- c. The source has accepted a facility-wide cap on annual combined HAPS emissions of no more than 23.75 tons per rolling 12-month period. Compliance with this allowable will be demonstrated by record keeping and emissions estimating methodology specified in the terms and conditions of the permit.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.